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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOC KET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|----------------------|------------------|
| 09/819,841 | 03/28/2001 | Dong-Soo Kim | OIP-04 | 1562 |
| 26875 | 7590 | 06-15/2004 | EXAMINER | |
| WOOD, HERRON & EVANS, LLP | | | DUONG, THANH P | |
| 2700 CAREW TOWER | | | ART UNIT | |
| 441 VINE STREET | | | PAPER NUMBER | |
| CINCINNATI, OH 45202 | | | 1764 | |

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,841

Applicant(s)

KIM, DONG-SOO

Examiner

Tom P Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.135(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on 11/17/2000. It is noted, however, that applicant has not filed a certified copy of the 2000-0068377 application as required by 35 U.S.C. 119(b).

Claim Objections

Claim1 is objected to because of the following informalities:

In claim 1, line 4, delete "in" after gas to aid clarity in the claim language.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art (Admission) in view of Wilder (548,941) and Dullien et al. (4,067,703) and Martin et al. (3,852,409). Admission discloses a gas scrubber (Fig. 1) comprising: burning chamber (3) to treat the gas (intake gas 1) with heat, a wetting chamber (5) connected to the burning chamber which removes water soluble components (specification page 2, lines 1-2) contained in the gas in from the burning chamber (3),

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an outlet (2) which exhausts the gas that has been treated, an insulation member (15) placed in a space between an outer wall (13a) and an inner wall (13b) of said burning chamber to prevent release of heat, and air supply pipe (11). Admission fails to disclose a water supply pipe placed between the inner wall and the insulation member, one end of the pipe being the inlet and the other end connected to the air supply pipe, wherein the water in the water supply pipe turns into steam and the air and steam is released into the burning chamber. Wilder teaches a liquid-heater (Fig. 1) with water pipe (coil 4) between the insulation member (casing 1 made of non-conducting material, page 1, lines 64-66), which prevents heat loss to the surrounding, and a burner 8 within the inner wall (chimney 7), which preheats the water (page 1, lines 9-11). Dullien teaches both water pipe (conduit 16) and the air pipe (conduit 20) are connected at the atomizer nozzle 14 (Fig. 2) and the spray discharges the mist, which facilitates removal of the dust from the exhaust gas stream. Martin makes it clear that the steam ejector atomized the water, which turbulently mixed with the carrier gas and entrained the carrier gas with water droplets to facilitate removal of the particulate matter from the carrier gas (Abstract). Thus, it would have been obvious in view of Wilder and Dullien and Martin to one having ordinary skill in the art to modify the scrubber of Admission with an insulated pipe as taught by Wilder in order to prevent heat loss to the surrounding and a water pipe as taught by Dullien and/or Martin to provide fine mist, which removes the particulate matter from the exhaust gas stream in order to obtain a clean gas exhaust.

Conclusion

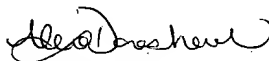
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong
May 29, 2004

TD



Alex Doroshenko
Patent Examiner
Art Unit 1764